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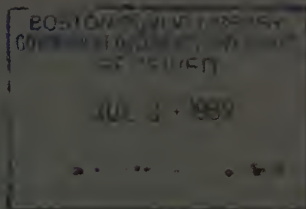
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Boston
Water and
Sewer
Commission



ANNUAL REPORT
1987

MESSAGE FROM CHAIRMAN TYE

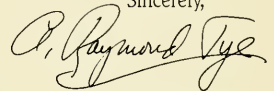
Throughout our ten year history, The Boston Water and Sewer Commission has endeavored to build and constantly improve its service obligation to its rate payers by being an efficient and well managed agency. The Commission is proud, not only of our record of past accomplishments, but also of the significant initiatives which we have undertaken to ensure the proper delivery and maintenance of quality water and wastewater services to the City of Boston.

As the Commission enters the next decade, we are preparing now for future system demands. As the largest customer of the Massachusetts Water Resources Authority, we are currently facing the financial impact that the Boston Harbor cleanup mandate will have upon both the Commission and the citizens of all the MWRA member communities in the Commonwealth of Massachusetts.

In addition, as Boston's strong economy continues to grow and attract new industry to this area, we are planning for the additional demand for water and wastewater services. We see our challenge to be the control of rate increases concurrent with the provision of necessary capital improvements.

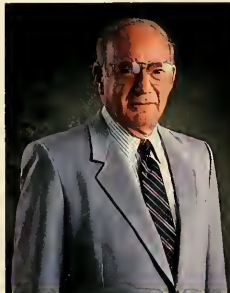
With continued prudent and sound fiscal management strategies, equipment maintenance and customer service, the Boston Water and Sewer Commission will move confidently into the 1990's. We are secure in knowing that the Commission has the resources to continue its tradition of service to the City of Boston.

Sincerely,



A. Raymond Tye
Chairman

◀ Dating back to the second century A.D., this aqueduct is located in Segovia, Spain. It was built by the Romans with unmortared granite blocks to transport water from over ten miles away.



A. Raymond Tye
CHAIRMAN



Mary Nee
COMMISSIONER



Lisa G. Chapnick
COMMISSIONER



A TRADITION OF SERVICE



Discovered in the Andean region
of Peru, this Inca pottery jar,
or *calabash*, dates back to 500
A.D., when it was used to
transport water from rivers
and streams to highland
fortresses.

Over the past decade the Boston Water and Sewer Commission has embarked upon an aggressive Capital Improvement Program intended to meet the present and future needs of the City of Boston. As a result, the Commission is well positioned to provide quality water and wastewater services at reasonable rates both now and into the next century.

The Commission has established an innovative long term debt management strategy which is designed to cost effectively fund its Capital Improvement Program enabling the Commission to keep water and sewer rates stable, thus mitigating the cost of required improvements to Boston's rate payers.

WATER AND SEWER RATES

The Commission's responsibility to provide water and wastewater services on a fair and equitable basis requires that it set rates at sufficient levels to meet all costs for operations.

The Commission is sensitive to the concerns of its rate payers over rising water and sewer rates, fueled by the much needed Boston Harbor cleanup. As a result, management has embarked upon an intensive public awareness effort while at the same time redoubling its efforts to control or cut administrative costs.

CAPITAL IMPROVEMENT PROGRAM

Boston's public water system dates back to 1848. Although some components of the system are over 100 years old, its overall structural integrity remains strong. Those portions of the system that require replacement or repairs have been identified and the necessary work has either been effected or is in the planning stages. Wherever possible, the Commission has enhanced the system's operability through upgrading its components to take advantage of advancements in technology.

Relaying and Relining Program

The primary purpose of the relaying and relining program is to ensure a supply of high quality water, at adequate pressure, for customer use and fire protection through the rehabilitation, installation and the cleaning of the water mains.

Metering Program

Since the inception of the metering program in late 1978, over 48,000 remote reading residential meters have been installed. This has dramatically reduced the number of estimated bills and has increased water accountability.

Computerized Work Order System

Automation of the water maintenance system was implemented at the end of January, 1987. The computerization of this system provides us with better utilization of manpower and isolation of troublesome areas.

Leak Detection Program

During 1987 the Commission conducted leak detection testing on 447 miles of piping out of a system total of 1182 miles, or 38% of the total system. Increased leak detection efforts will continue in order to encompass a greater percentage of the total system.

To make the detection of leaks much easier, the Commission has initiated a program of valve upgrading intended to facilitate the subdividing of service areas into smaller sections. This program will be instrumental in shortening response time required to detect and repair water main breaks or leaks.

The Commission's Hydrant Improvement Program will also reduce unaccounted for water by improving the operability of hydrants by eliminating ungated hydrants.

Wastewater Collection System

The backbone of the wastewater collection system is the Boston Main Drainage system, which was constructed between 1877 and 1884 and currently remains operational. This system combines five sewer mains, referred to as "interceptors," the Calf Pasture Pumping Station, and the Dorchester Bay Tunnel. Extensive plans were developed to replace two of the original interceptors with construction beginning in 1982, resulting in the completion of the New Boston Main Interceptor in 1987 and the New East Side Interceptor to be completed in 1988. Commission engineers consider the remaining interceptors to be structurally sound.

FINANCIAL STABILITY

The Boston Water and Sewer Commission's financial statements for 1987 show continued improvement in the Commission's financial condition. In 1987, our debt service coverage was 200%, significantly exceeding the mandated 125% requirement of our indenture documents.

Throughout this past year, the Commission maintained its Standard and Poors rating at "A" and its Moodys rating at "Baa 1." Early in the second quarter of 1988, Moody's Investor Services upgraded its rating to "A." The Commission has for the tenth consecutive year received an unqualified audit opinion.

The City's robust, vibrant economy continues to outperform much of the nation, and with this economic growth comes increased demand for services. As we prepare for these demands, we stand upon past achievements, secure in knowing that we are prepared to meet future challenges.



The Boston Water and Sewer Commission currently services over 87,000 homes, apartments, business and institutions through 1080 miles of delivery pipes and 1300 miles of drainage pipes.

LOOKING AHEAD

While the accomplishments of the Boston Water and Sewer Commission are many, our mission has only begun.

WATER DISTRIBUTION SYSTEM

The primary objectives of the proposed 1988-1990 water Capital Improvement Program will be met through three major areas of activity: a relaying and relining program; a metering program; and special projects.

Commission policy, whenever possible, is to tie relaying and relining of water to other work requiring street and highway construction, urban development, housing development, and subway construction. Coordinating projects in this way helps to minimize costs and reduce traffic-flow problems.

The Commission's metering program continues to place emphasis on increasing water accountability and equitably allocating the costs of water and wastewater services to its customers based upon actual usage. With this as our goal, we plan to continue the installation of remote reading residential meters, in conjunction with the Commission's 15 year meter replacement program.

As a special pilot project, we plan to initiate the use of electronic probing devices on larger user accounts, as well as the use of computerized hand held meter reading devices. These innovations should provide for quicker billing, better route manipulations, and the elimination of read verifications.

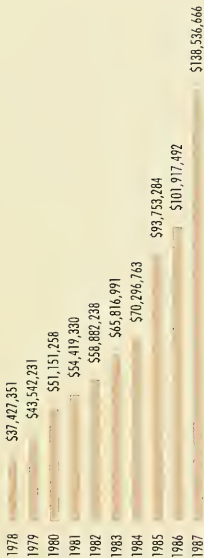
SEWER AND DRAINAGE SYSTEM

The sewer system Capital Improvement Program includes the protection of the structural integrity of current wastewater collection and storm drainage systems; the reduction of infiltration and inflow in the wastewater system; the control of combined sewer overflows; the improvement of water quality in Boston Harbor as well as its tributary rivers; and the separation of combined systems where appropriate and cost-effective.

Improvement projects fall into three broad categories: renewals and replacements, separation of combined sewers, and increased system capacity. Renewal and replacement projects, which maintain the useful life of existing facilities, are financed from the annual sewer rates. Projects in the other categories, which improve, enlarge or expand the system, are financed through the sale of bonds.

The promise of cost-efficient, quality water and wastewater systems is becoming a reality in Boston due to sound fiscal planning and effective operations management. Regardless of what the future may bring to the City, the Boston Water and Sewer Commission lies prepared to meet the challenge given to us a decade ago.

Combined Capital
Improvements
to Water & Sewer
Property



AUDITORS' OPINION

Boston Water and Sewer Commission:

We have examined the balance sheets of the Boston Water and Sewer Commission as of December 31, 1987 and 1986 and the related statements of operations, of Commission equity and of changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, such financial statements present fairly the financial position of the Boston Water and Sewer Commission at December 31, 1987 and 1986 and the results of its operations and changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Deloitte Haskins & Sells

Boston, Massachusetts
March 23, 1988

BALANCE SHEETS, December 31, 1987 and 1986

ASSETS	NOTES	1987	1986
CURRENT ASSETS:			
Cash		\$ 241,950	\$ 699,389
Trusted assets	1,4,7	10,602,991	12,595,006
Nontrusted assets	1,4	4,524,851	3,554,581
Accounts receivable - customers, less allowances of \$8,160,000 in 1987 and \$8,604,000 in 1986		27,327,027	35,002,146
Earned revenues in excess of billings, less allowances of \$639,000 in 1987 and \$397,000 in 1986	1	7,300,955	4,528,671
Accounts receivable:			
Federal and state construction grants		19,299,357	12,591,636
City of Boston - net	6	2,390,799	2,071,369
Prepaid expenses		721,792	1,126,018
Deferred charges	1,2,7	32,563,431	22,505,758
Total Current Assets		104,973,153	94,674,574
 TRUSTEED ASSETS	1,4	100,426,523	96,867,616
 NONTRUSTEED ASSETS	1,4	11,328,676	28,335,874
 PROPERTY, PLANT AND EQUIPMENT, NET	1,3,8	208,654,029	181,065,695
 DEFERRED CHARGES	1,2,7	35,958,127	29,570,773
 DEBT ISSUE COSTS, LESS AMORTIZATION	1	4,606,390	4,941,062
 TOTAL		<u>\$465,946,898</u>	<u>\$435,455,594</u>

See notes to financial statements.

LIABILITIES AND COMMISSION EQUITY

	<u>NOTES</u>	<u>1987</u>	<u>1986</u>
CURRENT LIABILITIES:			
Payable from current assets:			
Accounts payable		\$ 5,030,822	\$ 6,154,860
Other accrued liabilities	7	<u>4,054,777</u>	<u>3,041,058</u>
Total		<u>9,085,599</u>	<u>9,195,918</u>
Payable from restricted asset funds:			
Massachusetts Water Resources			
Authority assessment for water			
and sewerage	5	42,322,893	34,663,756
City Bonds	4	<u>689,436</u>	<u>747,023</u>
Total		<u>43,012,329</u>	<u>35,410,779</u>
General Revenue Bonds	4	<u>7,152,511</u>	<u>8,548,984</u>
Deferred revenues	1,2	<u>18,604,763</u>	<u>21,010,789</u>
Total Current Liabilities		<u>77,855,202</u>	<u>74,166,470</u>
OTHER LIABILITIES:			
Massachusetts Water Resources			
Authority assessment for water and			
sewerage	5	29,066,270	18,242,304
City Bonds	4	2,885,000	3,525,000
General Revenue Bonds	4	193,461,826	195,201,294
Deferred revenues	1,2	68,697,369	58,947,651
Other liabilities		<u>2,354,328</u>	<u>3,827,794</u>
Total Other Liabilities		<u>296,464,793</u>	<u>279,744,043</u>
COMMISSION EQUITY:			
Contributed capital	1	97,173,599	87,091,777
Accumulated deficit		<u>(5,546,696)</u>	<u>(5,546,696)</u>
Total Commission Equity		<u>91,626,903</u>	<u>81,545,081</u>
TOTAL		<u><u>\$465,946,898</u></u>	<u><u>\$435,455,594</u></u>

STATEMENTS OF OPERATIONS
for the Years Ended December 31, 1987 and 1986

	NOTE	TOTAL		WATER		SEWER	
		1987	1986	1987	1986	1987	1986
OPERATING REVENUES:							
Water and sewer usage		\$70,103,869	\$62,487,001	\$32,553,268	\$30,681,253	\$37,550,601	\$31,805,748
Fire pipe		1,021,521	742,152	1,021,521	742,152		
Other		1,127,391	853,753	515,218	418,339	612,173	435,414
Total Operating Revenues		<u>72,252,781</u>	<u>64,082,906</u>	<u>34,090,007</u>	<u>31,841,744</u>	<u>38,162,774</u>	<u>32,241,162</u>
OPERATING EXPENSES:							
Operations		49,595,870	41,953,509	22,671,027	20,753,385	26,924,843	21,200,124
Engineering and administrative		12,616,729	11,108,885	5,765,845	5,443,354	6,850,884	5,665,531
Maintenance		4,422,268	3,389,586	2,539,977	1,829,625	1,882,291	1,559,961
Depreciation		3,181,591	2,924,362	1,453,987	1,819,423	1,727,604	1,104,939
Total Operating Expenses		<u>69,816,458</u>	<u>59,376,342</u>	<u>32,430,836</u>	<u>29,845,787</u>	<u>37,385,622</u>	<u>29,530,555</u>
TOTAL OPERATING INCOME		2,436,323	4,706,564	<u>\$ 1,659,171</u>	<u>\$ 1,995,957</u>	<u>\$ 777,152</u>	<u>\$ 2,710,607</u>
OTHER INCOME (EXPENSE):							
Interest income		7,716,628	6,746,611				
Interest expense		<u>(15,568,111)</u>	<u>(7,504,160)</u>				
INCOME (LOSS) FROM CURRENT OPERATIONS	1	(5,415,160)	3,949,015				
PRIOR YEAR RATE SURPLUS RECOGNIZED IN CURRENT YEAR		8,863,251	4,914,236				
CURRENT YEAR RATE SURPLUS DEFERRED TO SUBSEQUENT YEAR	1	<u>(3,448,091)</u>	<u>(8,863,251)</u>				
NET INCOME		<u>\$ -0-</u>	<u>\$ -0-</u>				

See notes to financial statements.

STATEMENTS OF COMMISSION EQUITY
for the Years Ended December 31, 1987 and 1986

	CONTRIBUTED CAPITAL	ACCUMULATED DEFICIT	TOTAL COMMISSION EQUITY
Balance, January 1, 1986	\$72,514,229	\$(5,546,696)	\$66,967,533
Contributions in Aid of Construction	15,138,007		15,138,007
Depreciation of Related Property	(560,459)		(560,459)
Balance, December 31, 1986	87,091,777	(5,546,696)	81,545,081
Contributions in Aid of Construction	10,707,286		10,707,286
Depreciation of Related Property	(625,464)		(625,464)
Balance, December 31, 1987	<u>\$97,173,599</u>	<u>\$(5,546,696)</u>	<u>\$91,626,903</u>

See notes to financial statements.

STATEMENTS OF CHANGES IN FINANCIAL POSITION
for the Years Ended December 31, 1987 and 1986

	<u>1987</u>	<u>1986</u>
OPERATING ACTIVITIES:		
Net income	\$ -0-	\$ -0-
Depreciation and amortization (no funds required)	3,677,254	3,243,407
Realized from (used for):		
Accounts receivable - net	647,968	(14,013,964)
Earned revenues in excess of billings - net	(2,772,284)	3,049,928
Deferred charges	(16,445,027)	(24,662,657)
Accounts payable, assessments, accrued liabilities and other	16,159,025	886,051
Deferred revenues	7,343,692	9,184,726
Total	<u>8,610,628</u>	<u>(22,312,509)</u>
FINANCING ACTIVITIES:		
Bond:		
Proceeds		81,876,248
Payments	(2,850,000)	(1,630,000)
Contributions in aid of construction - net	10,081,822	14,577,548
Debt issue costs		(1,548,082)
Total	<u>7,231,822</u>	<u>93,275,714</u>
INVESTING ACTIVITIES - Purchase of property, plant, and equipment	<u>(30,769,925)</u>	<u>(27,589,812)</u>
CASH AND SECURITIES:		
Increase (decrease) during year	(14,927,475)	43,373,393
Balances at beginning of year	<u>142,052,466</u>	<u>98,679,073</u>
Balances at end of year	<u>\$127,124,991</u>	<u>\$142,052,466</u>
YEAR-END BALANCES COMPRISED OF:		
Cash	\$ 241,950	\$ 699,389
Current portion:		
Trusteed assets	10,602,991	12,595,006
Nontrusteed assets	4,524,851	3,554,581
Noncurrent portion:		
Trusteed assets	100,426,523	96,867,616
Nontrusteed assets	<u>11,328,676</u>	<u>28,335,874</u>
TOTAL CASH AND SECURITIES	<u>\$127,124,991</u>	<u>\$142,052,466</u>

See notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

1. ORGANIZATION, BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING PRINCIPLES

The Boston Water and Sewer Commission (the "Commission") has the responsibility to provide water and wastewater services on a fair and equitable basis in the City of Boston (the "City") as required under the Boston Water and Sewer Reorganization Act of 1977 (the "Enabling Act").

Under the Enabling Act, the Commission is required to maintain and present its financial statements in accordance with generally accepted accounting principles ("GAAP"). Also, the Commission has adopted a rate setting process which recognizes certain costs in periods other than when the costs are incurred. This is generally accepted as appropriate regulatory practice.

To accommodate this rate setting process the Commission follows the accounting standards set forth under the Financial Accounting Standards Board Statement No. 71 ("FAS-71"), "Accounting for the Effects of Certain Types of Regulation." FAS-71 requires that under regulation a) revenues provided for future allowable costs are deferred until the costs are actually incurred (deferred revenues); b) allowable incurred costs are capitalized if future recovery is assured (deferred charges).

The following is a reconciliation outlining the effects of FAS-71 on the statement of operations for the years ended December 31, 1987 and 1986:

	1987	1986
Income (loss) prior to deferrals	\$ (4,770,020)	\$ 2,631,615
Revenues and expenses deferred in accordance with FAS-71:		
Deferred revenues	(12,546,479)	(14,386,709)
Deferred expenses	<u>11,901,339</u>	<u>15,704,109</u>
Income (loss) from current operations	<u>\$ (5,415,160)</u>	<u>\$ 3,949,015</u>

The Enabling Act requires that any net surplus or deficit, as defined by the rate setting process, must either be returned to the City or applied to offset water and sewer rates for the following year. The Commission has applied \$3,448,091, and \$8,863,251 for the years ended December 31, 1987 and 1986, respectively, to offset rates in the respective subsequent years.

Revenues

Water and sewerage fees are billed to users of the systems on a quarterly cycle basis. Revenues are accrued for periods between the termination of billings for the various cycles and the end of the year.

Trusted and Non-Trusted Assets

These assets, consisting of direct and unconditionally guaranteed short-term obligations of the U.S. Government; repurchase agreements and money market units secured by government securities, are stated at cost plus accrued interest (approximating market).

Property, Plant and Equipment

Property, plant and equipment is stated at cost. Depreciation is provided on the straight-line method based on the estimated useful lives of the various classes of assets. Maintenance and repairs are charged to expense as incurred. Major renewals or betterments are capitalized and depreciated over their estimated useful lives.

Contributions received in aid of specific construction projects are considered contributed capital and are included in Commission equity. Accordingly, depreciation of the related property is charged directly to Commission equity and is not included in the accompanying statements of operations.

The ranges of estimated useful lives used in computing depreciation are as follows:

	<u>YEARS</u>
Water:	
Works	60 to 100
Meters and hydrants	10 to 40
Sewerage:	
Works	40 to 75
Pumping station	35
Other	3 to 15

The Commission capitalizes interest cost related to construction of assets for its own use. Interest totaling approximately \$1,258,000 and \$734,000 was capitalized in 1987 and 1986, respectively.

Bond Issue Costs

Expenses related to the issuance of bonds are amortized on a weighted-average basis over the life of the bonds.

Reclassification

Certain prior year balances have been reclassified to conform with current year presentation.

2. DEFERRED CHARGES AND REVENUES

The following is a summarization of the major components of deferred charges and revenues included in the accompanying balance sheet:

	<u>1987</u>	<u>1986</u>
	(000's omitted)	
Deferred charges:		
Provision for pension settlement (see Note 7)	\$17,111	\$17,707
Excess of amounts accrued for water and sewerage assessments over cash payments	42,403	23,938
Provision for litigation claims and other accruals	2,675	2,928
Provision for adjustments	1,485	2,228
Excess of amounts accrued over cash payments - bond interest	4,848	5,276
Total deferred charges	<u>\$68,522</u>	<u>\$52,077</u>
Current deferred charges	\$32,564	\$22,506
Noncurrent deferred charges	35,958	29,571
Total	<u>\$68,522</u>	<u>\$52,077</u>
Deferred revenues:		
Capital improvement reimbursements	\$57,897	\$45,803
Principal payments on long-term debt	4,573	8,175
Allowance for slow collection	8,282	9,682
Other	16,550	16,299
Total deferred revenues	<u>\$87,302</u>	<u>\$79,959</u>
Current deferred revenue	\$18,605	\$21,011
Noncurrent deferred revenue	68,697	58,948
Total	<u>\$87,302</u>	<u>\$79,959</u>

3. PROPERTY, PLANT AND EQUIPMENT

The cost of water and sewerage plant and equipment in service and related accumulated depreciation at December 31, 1987 and 1986 are summarized as follows:

	<u>1987</u>	<u>1986</u>
Water:		
Works	\$ 76,078,487	\$ 63,189,978
Meters and hydrants	8,926,947	8,228,903
Total water	<u>85,005,434</u>	<u>71,418,881</u>
Sewerage:		
Land	195,482	195,482
Works	77,030,797	54,002,202
Pumping station	6,781,316	6,777,290
Total sewerage	<u>84,007,595</u>	<u>60,974,974</u>
Other	8,541,307	6,622,028
Total	<u>177,554,336</u>	<u>139,015,883</u>
Less accumulated depreciation	<u>25,372,933</u>	<u>21,921,021</u>
Total	<u>152,181,403</u>	<u>117,094,862</u>
Construction in progress	<u>56,472,626</u>	<u>63,970,833</u>
Total	<u>\$208,654,029</u>	<u>\$181,065,695</u>

4. BONDS PAYABLE

Outstanding bonds payable including accrued interest, at December 31, 1987 and 1986 were as follows:

	<u>1987</u>	<u>1986</u>
Revenue Bonds:		
1984 Series A, bearing interest at rates ranging from 6.75% to 10.5% with maturity dates ranging from January 1, 1988 to January 1, 2011	\$ 67,495,121	\$ 67,991,521
1985 Series A, bearing variable interest rates (6.50% and 7.375% at December 31, 1987), maturing in two equal amounts on November 1, 2014 and 2015 and requiring annual sinking fund contributions through 2014	51,170,192	51,288,424
1986 Series A, bearing interest at rates ranging from 4.75% to 7.875% with maturity dates ranging from November 1, 1988 to 2015	81,949,024	84,470,333
City Bonds, bearing interest at rates ranging from 4.25% to 8% with maturity dates ranging from November 1988 to December 1999	3,574,436	4,272,023
Total bonds outstanding	<u>204,188,773</u>	<u>208,022,301</u>
Less current portion due within one year including accrued interest	<u>7,841,947</u>	<u>9,296,007</u>
Portion due after one year, net of unamortized original issue discount	<u>\$196,346,826</u>	<u>\$198,726,294</u>

The Resolution Establishing Issue of Revenue Bonds adopted by the Commission on December 6, 1984 places certain restrictions on the Commission's operations. It requires that rates, charges and fees be set at a level sufficient to meet a net revenue test on an annual basis and requires that all revenues, as defined, be deposited in a Revenue Fund maintained by a fiscal agent. Amounts held in the Revenue Fund are to be disbursed to and withdrawn from other funds provided for in the Resolution. The Resolution provides that all excess cash be held in the Revenue Fund until the last business day of the fiscal year. At that time, if certain covenants are met, the Commission has the option to remove any excess cash from the Revenue Fund and place such cash in a fund not restricted by the Resolution.

In compliance with the Resolution, the Commission has established both trustee and non-trustee funds with assets, principally short-term securities, which are restricted for payment of specified liabilities. The Commission has options for early redemption of revenue bonds starting in 1995 at prices ranging from 103 to 100 percent of face value.

Revenue Bonds

The 1984 Series A Bonds were issued in order to advance refund a series of 1980 System Revenue Bonds. Under the Refunding Trust Agreement, the Commission deposited sufficient funds with the 1980 Bond Trustee to pay when due, the principal and interest on all 1980 bonds through January 1, 2001, the final maturity date thereon. By depositing such funds with the 1980 Bond Trustee under the Refunding Trust Agreement, the Commission caused the 1980 Bonds to be no longer outstanding under the 1980 Resolution. The 1980 Bondholders have no right, title, interest or liens in any other funds, real or personal property or assets of the Commission other than the amounts held under the Refunding Trust Agreement and pledged for their benefit thereunder.

The 1985 Series A Bonds were issued to provide funds for projects under the Commission's ongoing capital improvement programs and other capital and operating needs.

In August of 1986, the Commission issued 1986 Series A General Revenue Bonds (1986 Bonds). This issue was structured as a rolling cross-over refunding and new money issue. The 1986 bonds provide funds for the Commission's ongoing capital improvement programs and other capital and operating needs. In addition, a portion of the proceeds of the 1986 bonds were deposited to the 1986 Series A Escrow Account to provide for the principal payments of the 1985 Series A Bonds and the interest payments of the 1986 bonds as they come due. Thus, the Commission is allowed to pay the low short-term interest rates provided under the 1985 bonds and has secured a guaranteed redemption for the 1985 bonds.

City Bonds

At the time of its creation, the Commission assumed general obligation certificates of indebtedness of the City (City Bonds) pertaining to the water and sewerage works systems. Payments for principal and interest are made directly to the City in accordance with the original maturity and interest schedule.

Aggregate bond maturity and sinking fund requirements of the Revenue bonds and City bonds at December 31, 1987 are as follows:

YEAR	TOTAL
1988	\$ 2,900,000
1989	3,015,000
1990	3,180,000
1991	3,165,000
1992	3,380,000
Thereafter	190,545,000
Subtotal	206,185,000
Accrued interest	4,941,947
Unamortized debt discount	(6,938,174)
Total bonds payable	<u>\$204,188,773</u>

5. MASSACHUSETTS WATER RESOURCES AUTHORITY

On January 1, 1985, legislation became effective creating the Massachusetts Water Resources Authority (the Authority) which transferred possession, control and operations of the Metropolitan District Commission (MDC) Waterworks and Sewer System to the Authority. The Authority commenced operations on July 1, 1985.

The Authority (previously MDC) provides all the Commission's water and sewer treatment requirements and assesses the Commission for its actual operating and capital expenses. Payments for the prior calendar year's water and sewer treatment assessments are due semi-annually in November of the current year and in May of the subsequent year. Interest is not charged on the outstanding balance. Charges and assessments for 1987 and 1986 are as follows:

	1987	1986
Water charges	\$21,720,502	\$15,761,242
Wastewater assessments	31,127,262	20,723,367
Total	<u>\$52,847,764</u>	<u>\$36,484,609</u>

In 1987 and 1986, approximately 67% of water purchased from the Authority was billable to customers. Since its inception, the Commission has increased the percentage of billable water from 52% in 1977 to the current level of 67% in 1987 and is continuing to take steps to improve the amount of water billable, including replacement of old and defective meters and a comprehensive leak detection and repair program.

6. TRANSACTIONS WITH THE CITY OF BOSTON

The Commission's ongoing program to meter City facilities has resulted in billings to nine City departments based on actual consumption of \$1,090,000 and \$1,016,000 in 1987 and 1986, respectively. The remaining four City departments were billed based on estimated consumption for \$1,319,000 and \$1,182,000 during 1987 and 1986, respectively.

The City provides services to the Commission, including paving and facilities rental. Operating costs billed by the City were \$463,000 and \$481,000 during 1987 and 1986, respectively. Capital costs billed by the City were \$263,000 and \$264,000 during 1987 and 1986, respectively.

7. RETIREMENT BENEFITS

The Commission provides retirement benefits to substantially all of its employees through a pension trust fund (trust fund) and the State-Boston Retirement System (Boston System). The Commission's policy is to accrue the normal cost of future benefits using an actuarially determined rate of 6.75% and 11.14% of regular compensation in 1987 and 1986, respectively. Pension expense is generally funded annually and was \$805,000 and \$1,267,000 for 1987 and 1986, respectively.

The fair market value of trust fund net assets available for benefits was \$11,442,000 and \$10,984,000 at December 31, 1987 and 1986, respectively. The trust fund reimburses the Boston System for the Commission's share of all benefit payments made to its retired employees and related administrative costs.

During 1986, a dispute concerning the Commission's past and future obligations to all employees covered by the Boston System was settled, resulting in a payment of \$19,100,000 to the Boston System. This payment, funded primarily through proceeds from bonds issued in 1985 and 1986, was recorded as a deferred charge to be recovered through future rates.

8. COMMITMENTS

During 1987, the Commission moved its administrative offices. In conjunction with the move to new offices, the Commission terminated its lease and a new lease was obtained for the new office space. The new lease provides for an initial term of five years with two options to extend the lease for additional five-year terms. The basic rent will include an allocation for building operating costs and is subject to an escalation clause subject to certain limitations. Total rent expense charged to operations amounts to \$820,000 and \$758,000 in 1987 and 1986, respectively.

A major capital improvement program is currently in progress. As part of this program, the Commission has entered into a number of contracts for the design and construction of its facilities. Commitments under these contracts aggregate \$11,107,000 at December 31, 1987. Capital improvements, primarily related to water and wastewater system projects with an emphasis on the clean-up of the Boston Harbor area, are expected to aggregate \$65 million for 1987 through 1991. Of this amount \$30 million represents extension and improvement projects to be funded by the proceeds of Commission revenue bonds and federal and state grants for certain wastewater projects, and \$35 million represents renewal and replacement projects to be funded by current revenues of the Commission.

9. CONTINGENCIES

The Commission is involved in ordinary and routine litigation incidental to its operations. Management believes that the resolution of these matters will not materially affect the financial position of the Commission.

The Commission has received federal and state grants for specific purposes that are subject to review and audit by the grantor agencies. Such audits could lead to requests for reimbursement to the grantor agency for expenditures disallowed under the terms of the grant. The Commission believes such disallowances, if any, will not be significant.

The Commission is involved as a defendant in litigation regarding the pollution of Boston Harbor. Management believes that, except for increases in future MWRA assessments incidental to the litigation, the Commission's extensive capital improvement program (see Note 8) addresses possible actions that the Commission may be required to undertake in connection with this litigation.



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